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**Title**

Perfectionism and beliefs about emotions in adolescents with Chronic Fatigue Syndrome and their parents: A Preliminary Investigation in a Case Control Study nested within a cohort


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**Abstract**

**Objectives:** To investigate perfectionism and beliefs about emotions in adolescents with Chronic Fatigue Syndrome (CFS) and their parents.

**Design:** Case-control comparing adolescents (age 11-18) with CFS (N = 121), asthma (N = 27) and healthy controls (N = 78) with a 3 month follow up for CFS participants.

**Main outcome measures:**

Adolescents: Chalder Fatigue Questionnaire, physical functioning, Beliefs about Emotions scale (BES), Child and Adolescent Perfectionism Scale, Frost Multidimensional Perfectionism Scale (FMPS).

Parents: BES, FMPS, Self—sacrificing scale, Affective styles questionnaire.

**Results:** Adolescents with CFS did not consistently report higher levels of perfectionism and unhelpful beliefs about emotions than adolescents with asthma or healthy adolescents. Mothers' and adolescents' beliefs about emotions and unhelpful perfectionism were significantly associated ($p$ = .007). Linear regression found that neither adolescent perfectionism nor beliefs about emotions accounted for variance in subsequent fatigue or physical functioning.

**Conclusion**: Parental perfectionism and emotion regulation style may contribute to perfectionism in adolescents with CFS. Parental representations could contribute to fatigue maintenance.

**Keywords**: CFS, adolescents, perfectionism, parents, emotions

**Introduction**

Chronic Fatigue Syndrome (CFS) is diagnosed when ongoing, medically unexplained fatigue, which may be accompanied by other symptoms, does not remit with rest (NICE, 2007). Prevalence estimates in adolescents range from 0.1% to 2% (Brigden, Loades, Abbott, Bond-Kendall, & Crawley, 2017). CFS causes significant disability and distress (Bould, Lewis, Emond, & Crawley, 2011; Crawley, Hunt, & Stallard, 2009) and is associated with increased healthcare usage (Collin, Bakken, Nazareth, Crawley, & White, 2017). As a substantial minority of patients do not recover even when provided with evidence based treatments (Lloyd, Chalder, Sallis, & Rimes, 2012; Nijhof, Bleijenberg, Uiterwaal, Kimpen, & van de Putte, 2012), it is important to better understand what contributes to the maintenance of fatigue in order to target treatments as effectively as possible.

A conceptual model of CFS in adolescents contends that psychological processes may make an individual more prone to developing fatigue following an acute infection or significant life event, and may also contribute to the maintenance of fatigue following onset (Lievesley, Rimes, & Chalder, 2014). These processes include perfectionism and beliefs about emotions (Lievesley et al., 2014). Perfectionism is multidimensional and encompasses high self-standards, critical self-evaluation, standards perceived to be imposed by others, and standards imposed on other people. Some facets of perfectionism, such as striving for achievement, may be adaptive, whilst others, like excessive concern over mistakes, may be maladaptive (Clark & Coker, 2009; Soenens et al., 2005). Negative perfectionism, also known as unhelpful perfectionism, can be defined as ''setting an almost unattainable high standard, valuing only successes and the attainment of all goals set'' (Flett, Coulter, Hewitt, & Nepon, 2011). Unhelpful perfectionism makes young people more likely to develop anxiety and depression (Essau, Leung, Conradt, Cheng, & Wong, 2008; Flett et al., 2011; Flett et al., 2016; Hewitt, Newton, Flett, & Callander, 1997; Roxborough et al., 2012; Stornelli, Flett, & Hewitt, 2009), and predicts outcomes in treatment for depression (Jacobs et al., 2009). Unhelpful beliefs about emotions (for example, “negative emotions are unacceptable and should be avoided”

can cause problems in the development of emotional regulation and processing skills, leading to the individual suppressing, ignoring, or avoiding emotions and focusing on somatic symptoms (Lievesley et al., 2014; Rimes & Chalder, 2010; Surawy, Hackmann, Hawton, & Sharpe, 1995).

These psychological processes have been previously investigated in adults with CFS. A prospective study of adults with glandular fever found that unhelpful perfectionism put individuals at greater risk of developing CFS subsequently (Moss-Morris, Spence, & Hou, 2011). Furthermore, adults with CFS have higher levels of unhelpful perfectionism than healthy adults (Deary & Chalder, 2010; Kempke et al., 2011), and unhelpful perfectionism may decrease after CFS onset (Brooks, Chalder, & Rimes, 2017). Adults with CFS are more likely to believe that they ought to be able to control their emotions, that others will react unfavourably to their emotions and that experiencing negative emotions is a sign of weakness (Rimes & Chalder, 2010). An experimental study has shown that such beliefs lead to higher levels of self-reported emotional suppression during an experimental task, and that adults with CFS hide their emotions more than healthy individuals (Rimes, Ashcroft, Bryan, & Chalder, 2016). Importantly, such beliefs about emotions have been associated with reduced odds for recovery in adults who had CBT for CFS in routine practice (Flo & Chalder, 2014).

However, there has been little empirical investigation to explore these psychological processes in adolescents with CFS. High levels of personality factors related to perfectionism including increased conscientiousness have been found in adolescents with CFS (Rangel, Garralda, Hall, & Woodham, 2003), and baseline unhelpful perfectionism has been associated with lower school attendance 6 months after CBT for CFS (Lloyd, Chalder, Sallis, et al., 2012). Setting high standards has been highlighted as a potential contributory factor by some parents of young people with CFS (Richards, Turk, & White, 2005). Little is known more specifically about unhelpful perfectionism and beliefs about emotions in this population.

Traits like perfectionism and beliefs about emotions develop within the context of the family. Thus, parental perfectionism and beliefs about emotions may be related to adolescent perfectionism and beliefs about emotions through one or more mechanisms. Firstly, it has been suggested that these processes may be heritable (Soenens et al., 2005). Secondly, these processes may be learned through modelling of behaviour by the parents. For example, this may include the modelling of emotion regulation strategies (e.g. self-sacrificing) and affective styles (Flett, Hewitt, Oliver, & Macdonald, 2002; Soenens et al., 2005). That is, the way in which parents deal with their emotions could influence the way that their children manage their own emotions. Thirdly, parenting style may also be another mechanism by which parental perfectionism and beliefs about emotions impact on children's emotional processing (Morris & Lomax, 2014). This may include parental attention and praise for achieving high standards (Flett et al., 2002), or significant others responding to a child's emotions in a dismissive or unsupportive way, in the context of implicit or explicit messages about the value of positivity.

Therefore, this preliminary study aimed to explore perfectionism and beliefs about emotions in adolescents with CFS and their parents. Specifically, we hypothesised that (1) adolescents with CFS would have higher levels of unhealthy perfectionism and more unhelpful beliefs about emotions compared to adolescents with asthma and healthy controls, (2) parental and adolescent perfectionist tendencies and beliefs about emotions would be significantly correlated in CFS, (3) parent affective style and self-sacrificing would be associated with adolescent perfectionism and beliefs about emotions in CFS, and (4) unhealthy perfectionism and unhelpful beliefs about emotions would predict a significant proportion of the variance in fatigue and functioning over time.

## Materials and Methods

### Participants

Three groups of adolescents, age 11-18, and their parents, were recruited to complete questionnaires at baseline (table 1). All data collection took place within the UK. Both parents were invited to complete the measures independently of one another. Same sex parents were eligible to participate. More mothers than fathers participated (table 1).

CFS participants – This group was recruited from consecutive attenders at 2 specialist CFS units. Recruitment commenced in August 2010 and continued until January 2017. The additional eligibility criterion for this group was a clinician-confirmed diagnosis of CFS. Of 135 potentially eligible adolescents with CFS who attended the CFS units during the assessment period, 121 (89.6%) consented to participate in this study.

Asthma participants – This group was recruited via GP surgeries, who identified patients who met the inclusion criteria. The additional eligibility criteria were that these participants were prescribed medication for asthma, and did not have a history of psychiatric disorder or CFS.

Healthy participants – This group was recruited via secondary schools, who sent letters to potential participants. Relatives of clinic staff were also invited to attend (N = 2). The additional eligibility criteria for this group were no history of asthma, CFS or psychiatric disorder.

[insert table 1]

**Measures**

All measures were completed using pen-and-paper. Adolescents completed the following measures (see supplementary materials table S1. for reliability analysis):

*Fatigue* – the 11-item Chalder Fatigue Questionnaire, CFQ (Chalder et al., 1993) assesses the severity of mental and physical fatigue over the past month. Each item is rated on a 4 point scale. A total score is calculated by summing the scores on each item, resulting in possible range of scores from 0-33. Higher scores indicate higher levels of fatigue. The CFQ is considered to be reliable and valid in adult samples (Cella & Chalder, 2010), but has not been formally evaluated in adolescents with CFS. In the current study, Cronbach's alphas were 0.89 (CFS participants), 0.66 (asthma participants) and 0.82 (healthy controls).

*Physical Functioning* – the 10-item Short Form 36 physical functioning scale, SF36PFS (Ware Jr, Kosinski, & Keller, 1996) assesses the extent to which a respondent is limited by their health across a range of activities of daily living. Responses are on a 3-point scale. A scoring key is used to convert raw scores to a 0-100 scale. Higher scores indicate better physical functioning. The SF36 has been validated in adolescents with cystic fibrosis (Gee, Abbott, Conway, Etherington, & Webb, 2002) but not in CFS. In the current study, Cronbach's alphas were 0.91 (CFS participants), 0.72 (asthma participants) and 0.90 (healthy controls).

*Beliefs about emotions* – The Beliefs about Emotions Scale (Rimes & Chalder, 2010) is a 12-item scale designed to assess beliefs about experiencing and expressing negative affect. Higher scores indicate more unhelpful beliefs about emotions. Scores range from 0-72. This measure has not been subject to psychometric investigation in adolescents. In the current study, Cronbach's alphas were 0.92 (CFS participants), 0.85 (asthma participants) and 0.90 (healthy controls).

*Perfectionism* – the Child and Adolescent Perfectionism Scale (Flett et al., 2016) is a 22-item scale, which measures 2 factors which are considered to be maladaptive; self-oriented perfectionism (i.e. holding extremely high personal standards and being excessively driven to achieve these) and other-oriented or socially prescribed perfectionism (i.e. believing that others demand extremely high

standards of the self). Self-oriented perfectionism is composed of 12 items, with scores ranging from 12-60. Other-oriented perfectionism is composed of 10 items, with scores ranging from 10-50. The CAPS has been found to be valid and reliable in adolescents (Flett et al., 2016). In the current study, Cronbach's alphas were 0.92 (CFS participants), 0.92 (asthma participants) and 0.88 (healthy controls).

The Frost Multidimensional Perfectionism Scale (Frost, Marten, Lahart, & Rosenblate, 1990) consists of 35 items and has six subscales; personal standards, concern over mistakes, parental expectations, parental criticism, doubts about actions, and organisation. The concern over mistakes and doubts about actions subscales were combined to form a "maladaptive perfectionism" subscale, and the parental expectations and parental criticism subscales formed a "parental representations" subscale (Stöber, 1998).The personal standards subscale and organisation subscale were analysed separately. The FMPS has been validated in student samples (Parker & Adkins, 1995) and in adolescents girls (Hawkins, Watt, & Sinclair, 2006). Each item on the FMPS is scored from 1-5, with subscale scores created by summing the total across the items in that particular scale. In the current study, Cronbach's alphas were > 0.7 for all subscales and groups (see supplementary materials S1).

Parents (both mothers and fathers) completed the FMPS and BES with reference to their own beliefs and tendencies. They also completed the following questionnaire measures:

*Self-sacrificing* - The 16 item Young Schema Questionnaire Self Sacrifice subscale (Young & Brown, 1994) assesses an individual's tendency to prioritise other people's needs over their own. Higher scores indicate more self-sacrificing. Scores range from 16 to 96. Validity and reliability have been previously examined (Oei & Baranoff, 2007).

*Emotion regulation* – The Affective Styles Questionnaire (Hofmann & Kashdan, 2010) is a 20 item questionnaire which assesses emotion regulation strategies, specifically habitual attempts to suppress or hide emotions (Concealing subscale), a general ability to manage emotions responsively (Adjusting subscale) and being accepting towards emotions (Tolerating subscale). Higher scores indicate more endorsement of that emotion regulation strategy. The ASQ has been found to be valid and reliable in adults (Hofmann & Kashdan, 2010).

**Procedure**

CFS patients: Questionnaires and an invitation letter, explaining how this information would be used for research and evaluation, were enclosed with initial assessment appointment letters. All caregivers were asked to attend the first appointment. Sometimes mothers and fathers attended but sometimes just mothers. At the end of the initial assessment appointment, the healthcare professional explained the study and gave the patient an information sheet, following which consent to participate was sought and questionnaires were collected. Those with CFS who attended the CFS unit for a subsequent follow-up appointment completed questionnaires again approximately 3 months later. Alternatively they were posted measures which they completed and returned in a freepost envelope. Separate envelopes were provided for each family member.

Asthma patients: GP surgeries identified patients who met the inclusion criteria and posted them an invitation letter. Questionnaires were completed and returned by post.

Healthy controls: Secondary schools sent letters to potential participants, inviting them to participate. Clinic staff or their relatives who met the eligibility criteria were also invited to participate. Questionnaires were completed and returned by post.

These participants also completed other measures which have been reported elsewhere (Loades, Rimes, Ali, Lievesley, & Chalder, 2017; Loades, Rimes, Lievesley, Ali, & Chalder, 2018)Loades et al, in press).

**Ethical Approval**

For data collected between August, 2010 and December, 2012, NHS research ethics committee (LREC, ref 08/H0807/107) approval, and the Research and Development departments at the South London and Maudsley (SLaM) NHS Trust, and Great Ormond Street Hospital permissions, were secured. The clinical audit committee of Psychological Medicine Clinical academic group, SLaM approved the collection of routine outcomes from January 2013 onwards.

**Data Analysis Plan**

Data analysis was conducted using SPSS 23.0. Where ≤ 25% of the data for a participant on a specific scale was missing, the mean of the completed items was substituted for the missing values. Where > 25% of the data was missing, no imputation was conducted and the participant was treated as missing on that scale (see supplementary table S3).

Homogeneity of variances (Levene's test) and distribution (Shapiro-Wilks test) on the variables of interest were checked before proceeding to ensure assumptions were met. The groups were compared on demographic variables using one-way ANOVAs. One-way ANOVAs were used to compare means on the variables of interest, with post-hoc pairwise comparisons (with Games-Howell test applied where variance was unequal, and Tukey's test applied where variance was equal to establish the direction of significant findings. Associations between the factors of interest at baseline and concurrent fatigue were explored using bivariate correlations. To account for multiple testing, we considered $p < .01$ to be significant. P values between 0.01 and 0.05 were considered to be a non-significant trend.

In adolescents with CFS, 2-tailed bivariate Pearson's correlations were used to examine the associations between the adolescent's scores on the variables of interest and those of their parents. We considered $p < .01$ to be significant. P values between 0.01 and 0.05 were considered to be a non-significant trend.

Hierarchical linear regression provides a method of exploring the amount of variance explained by particular factors of interest whilst statistically controlling for other factors which might be related to the outcome (Field, 2013). This method was selected as it allowed us to control for the baseline measurement of the dependent variable whilst exploring predictors of change over the follow-up period. Fatigue (CFQ) and physical functioning (SF36PFS) were the dependent variables (outcomes of interest). Baseline fatigue/or physical functioning were included as covariate. Adolescent perfectionism (CAPS and FMPS subscales) and Beliefs about Emotions were tested as predictors of change.

**Results**

The groups did not differ significantly on mean age but did differ on fatigue and functioning (table 2).

[insert tables 2 and 3]

The groups were not significantly different from each other on the CAPS-self oriented perfectionism scale, nor on the organisation, personal standards, or maladaptive perfectionism subscales of the FMPS (see table 2). There was a non-significant trend towards a group difference on the CAPS-other oriented perfectionism scale ($F$ = 3.60, $p$ = .029); CFS participants scored lower (M = 22.6, SD = 8.8) than healthy controls (M = 26.0, SD = 8.4), whilst asthma participants were not different from either group (M = 24.2, SD = 9.1). CFS participants scored significantly lower (M = 16.1, SD = 6.1) than healthy controls (M =21.1, SD = 7.2) on the FMPS Parental Representations subscale ($F$ = 14.22, $p$ < .0001), whilst asthma patients were not significantly different from either group (M = 19.1, SD = 6.7). There were no significant group differences on Beliefs about Emotions (table 2). In summary, CFS patients reported lower levels of perceived parental criticism and perceived parental expectations than healthy controls, and also were less inclined to perceive others as expecting high standards of them.

For the parent measures, fathers of adolescents with CFS scored significantly lower on the FMPS parental representations subscale (M = 18.2, SD = 6.5) than fathers of healthy controls (M = 22.8, SD = 7.4, F = 5.46, $p$ = .005). Fathers of asthma patients (M = 22.3, SD = 8.3) were not significantly different from either group. However, there were no other significant group differences on the perfectionism subscales nor on the Beliefs about Emotions subscale (see table 3). There was a non-significant trend for mothers of CFS participants to be more self-sacrificing than those of the asthma group, but not different to those of healthy adolescents (F = 4.46, $p$ = .013).

In adolescents with CFS, bivariate correlations found that there was a non-significant trend towards an association between adolescent and mother's FMPS personal standards (mother $r$ = 0.24, $p$ = .015; father $r$ = 0.22, $p$ = .067), whilst FMPS organisation and FMPS parental representations were not significantly correlated (table 4). FMPS Maladaptive perfectionism (concern over mistakes and

doubts about actions) was significantly correlated between adolescents and their mothers ($r$ = 0.33, $p$ = .001), but not between adolescents and their fathers (table 4).

[insert table 4]

Adolescents' beliefs about emotions on the BES were significantly correlated with mothers' beliefs about emotions ($r$ = 0.26, $p$ = .007) but not with fathers' beliefs about emotions ($r$= -0.03, $p$ = .806).

Most aspects of adolescent perfectionism and perfectionistic beliefs about emotions were not significantly associated with mother's or father's affective style, nor with their self-sacrificing tendencies (table 5). The exception was that there were non-significant trends towards negative correlations between parental adjusting responses to emotions and adolescent FMPS personal standards (maternal ASQ adjusting subscale, $r$ = -0.24, $p$ = .015), adolescent FMPS maladaptive perfectionism (paternal ASQ adjusting subscale, $r$ = -0.26, $p$ = .033), and adolescent FMPS parental representations (paternal ASQ adjusting subscale, r = -0.29, $p$ = .018). That is, a paternal emotion regulation style of adjusting to, working with, and reappraising in response to emotions may be related to lower levels of some aspects of perfectionism in adolescents.

[insert table 5]

The above findings remained the same when a sensitivity analysis was conducted, using the raw data rather than the imputed data (supplementary materials tables S4-S7).

In the CFS group, 82 (67.8%) participants completed follow-up measures. Those followed-up did not differ significantly from those who were not followed up (supplementary materials table S2). A hierarchical linear regression found that baseline perfectionism and beliefs about emotions

accounted for little of the variance in fatigue at follow-up (2.5%, see table 6). Similarly, baseline perfectionism and beliefs about emotions accounted for little of the variance in physical functioning at follow-up (4.7%).

**Discussion**

In this preliminary study, we did not find evidence for the hypothesis that adolescents with CFS would report higher levels of perfectionism and unhelpful beliefs about emotions than adolescents with asthma or healthy adolescents. As expected, some aspects of parental perfectionism and parental emotion regulation style were related to perfectionism in adolescent CFS patients. However, adolescent perfectionism was not associated with fatigue a few months later.

Contrary to expectations, and to the proposition by Lievesley et al. (2014) that setting high standards for the self is a predisposing factor for CFS, this study found no differences between groups on maladaptive perfectionism/self-oriented perfectionism, or on personal standards. However, with this cross-sectional study, which recruited adolescents with CFS post-diagnosis, it is not possible to conclude that perfectionism does not pose a vulnerability factor to developing CFS. A study of adults with CFS found that perfectionism post-diagnosis was not significantly different from healthy adults but their reports of pre-morbid perfectionism were significantly higher (Brooks et al., 2017). It is possible that people are forced to modify their perfectionism as a result of disabling CFS symptoms or that they choose to do so. In the present study, socially-prescribed perfectionism, including perceived parental criticism and parental expectations, tended to be lower in the CFS group than in healthy controls. It may be that significant others have lowered their expectations in response to the CFS symptoms and impact, or this pattern may have been present pre-morbidly. Potentially, lower expectations could be an impediment to encouraging the processes that facilitate recovery from CFS, such as gradually and incrementally engaging in activities.

Holding unhelpful beliefs about emotions did not differ significantly across groups either, which was also contrary to expectations. This is different to findings in adults with CFS (Rimes et al., 2016; Rimes & Chalder, 2010), with unhelpful beliefs about emotions likely to lead to maladaptive emotion regulation strategies such as emotional suppression and somatising. However it has previously been found that adults with CFS report significantly more negative beliefs prior to CFS onset than after diagnosis (Brooks et al., 2017). Developing CFS may mean that an individual has to experience negative emotions from others (e.g. disappointment), which may have previously been avoided. This may lead to modification of their pre-existing beliefs about negative emotions being unacceptable or leading to rejection from others. The current study did not ask adolescents to rate their beliefs about emotions before CFS onset but this could be investigated in a future research.

There does appear to be some evidence from the current study that inter-generational transmission of aspects of perfectionism and beliefs about emotions may occur in adolescents with CFS. Both mothers and fathers seemed to be important models for developing perfectionism and beliefs about emotions, but in different ways. Mothers' beliefs about emotions were associated with those in their adolescent offspring, whilst fathers' emotional regulation strategies, particularly readjusting to and reappraising situations, were associated with lower levels of adolescent perfectionism. There is a dearth of research into the role of fathers, and this illustrates how fathers may be important role models too, but for different aspects of perfectionism and in different ways. It is not possible to conclude that modelling was the method of transmission, and it is possible that either parenting style or genes may have contributed to the associations found.

The finding that fatigue did not differ significantly from baseline to a pre-treatment follow-up in adolescents with CFS seeking help from specialist services is consistent with previous research (Lloyd, Chalder, Sallis, et al., 2012; Nijhof et al., 2012). This further supports the importance of access to evidence based therapies which have been shown to be relatively effective in reducing fatigue

and improving functioning in this patient group. It appears that perfectionism and beliefs about emotions are not directly associated with levels of fatigue, which is contrary to our hypotheses.

*Strengths and Limitations*

Rates of study uptake amongst those attending the CFS units during the recruitment period were good. However, due to the study design, we were unable to determine rates of study uptake in the asthma and healthy control groups, precluding inferences about the representativeness of these groups. The findings of this study are likely to generalise to adolescents presenting to specialist CFS services in the UK, who tend to be predominantly white British; however, limited conclusions can be drawn about the extent to which the findings apply to those from other ethnic groups, those managed in primary care and those who are too severely affected to attend services. A further strength was the inclusion of both mothers and fathers who both completed questionnaires. However, not as many fathers completed questionnaires, particularly in the asthma group.

A further strength of this study is that the diagnosis of CFS diagnoses was confirmed by a clinician at the initial assessment. However, despite there being no apparent significant differences between those followed up and those not followed up, the loss of some participants to follow-up may have introduced bias. This seems unlikely as those followed-up were not significantly different from those who were not followed up. Although data was available for 2 time points in CFS participants, it is not known what, if any, treatments adolescents were accessing during the relatively brief follow-up period (whilst awaiting intervention in a specialist CFS service), and it is also not possible to determine whether the patterns of the psychological factors investigated were present pre-morbidly in CFS participants, or whether they may have developed as a result of CFS.

Whilst both mothers and fathers completed measures of self-sacrificing and affective style, adolescents did not complete comparable measures, which is a limitation of this study. The reliance

on self-report measures is also a limitation. The lack of measures of parenting style, which may be a mechanism for intergenerational transmission of perfectionism (Clark & Coker, 2009; Morris & Lomax, 2014), could also be remedied in future studies. Although the measures the adolescents completed were the most appropriate and best available at the time of study design, psychometric properties in this population have yet to be fully investigated.

As this was a preliminary investigation, it will be important to establish whether the findings are replicated in more robust studies using more sophisticated analyses as there was a risk in the current study of Type 1 error. Furthermore, the current study had missing data, and used a mean imputation method rather than multiple imputation to substitute missing values. Conducting multiple tests increases the possibility that the findings could be due to chance, although we did adjust the alpha level to <.01 rather than <.05.

*Implications and Conclusions*

This preliminary study has indicated that there may be aspects of perfectionism which are different in CFS patients as compared to healthy controls, particularly in relation to the perceived expectations of significant others. If replicated, this could be an important target in treatment of CFS. In adolescent depression, higher levels of perfectionism have been associated with poorer treatment outcomes (Jacobs et al., 2009). Further research is required to establish whether high levels of perfectionism impact detrimentally on treatment outcome in CFS/ME. The findings of this study also indicate the potential importance of a family based approach to treatment (Lloyd, Chalder, & Rimes, 2012), given that it is other-oriented perfectionism which seems to be different in CFS, rather than self-oriented perfectionism. Furthermore, involving both mothers and fathers in treatment could be important, as different aspects of maternal perfectionism and beliefs about emotions, but paternal affective style were related to perfectionism in adolescents.

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**Declaration of interests**

TC is the author of several self-help books on chronic fatigue for which she has received royalties. KR has co-authored a book with TC called “Overcoming Chronic Fatigue in Young People”. ML, SA and KL declare that they have no conflict of interest.

Table 1. Participant demographics

| | CFS participants (n=121) | Asthma participants (n=27) | Healthy Controls (n=78) |
|---|---|---|---|
| **Age (mean)** | 15.0 | 14.9 | 14.6 |
| | | **Ethnicity – N(%)** | |
| **White British** | 86 (71.1) | 16 (59.3) | 65 (83.3) |
| **Black British** | 2 (1.7) | 1 (3.7) | 1 (1.3) |
| **Asian/British Asian** | 3 (2.5) | 2 (7.4) | 2 (2.6) |
| **Other British/ European/White** | 25 (20.7) | 7 (25.9) | |
| **Other Black/Asian** | | | 4 (5.2) |
| **Mixed race** | 4 (3.3) | | 2 (2.6) |
| **Not stated** | 4 (3.3) | 1 (3.7) | 4 (5.1) |
| **Number of mothers who participated** | 108 | 26 | 71 |
| **Number of fathers who participated** | 70 | 7 | 35 |
| **Number of families where both parents participated** | 53 | 7 | 28 |

Table 2. Between group comparison on baseline variables - adolescent

| | Group | | | |
|---|---|---|---|---|
| | **CFS** | **Asthma** | **Healthy controls** | **Group difference** |
| | **Mean (SD)** | **Mean (SD)** | **Mean (SD)** | |
| **Age (years)** | 15.0 (1.7) | 15.0 (2.2) | 14.6 (1.4) | $F(2,223)= 1.57$, $p=.210$ |
| **Fatigue (CFQ)** | 23.2(5.8) | 11.9 (2.7) | 10.5 (3.8) | $F(2,222)= 182.09$, $p<.0001$** |
| **Physical functioning (SF36PFS)** | 50.0 (25.1) | 88.5 (12.7) | 90.3 (17.1) | $F(2, 214)= 95.23$, $p<.0001$** |
| **Perfectionism – Self-oriented perfectionism (CAPS)** | 34.8 (11.0) | 34.1 (8.8) | 35.8 (6.6) | $F(2, 223)= 0.49$, $p=.665$ |
| **Perfectionism – Other-oriented perfectionism (CAPS)** | 22.6 (8.8) | 24.2 (9.1) | 26.0 (8.4) | $F(2, 222)$ 3.60, $p=.029$* |
| **Perfectionism - Personal Standards (FMPS)** | 19.3 (7.3) | 19.0 (4.2) | 20.8 (5.1) | $F(2, 220)= 1.44$, $p=.240$ |
| **Perfectionism - Parental Representations (FMPS)** | 16.1 (6.1) | 19.1 (6.7) | 21.1 (7.2) | $F(2, 220)= 14.22$, $p<.0001$** |
| **Perfectionism - Maladaptive perfectionism (FMPS)** | 29.5 (12.1) | 27.9 (8.9) | 27.7 (9.3) | $F(2,220)=0.74$, $p=.479$ |
| **Perfectionism - Organisation (FMPS)** | 18.6 (6.0) | 19.6 (5.5) | 20.2 (5.9) | $F(2, 220)= 1.89$, $p=.154$ |
| **Beliefs about Emotions (BES)** | 34.4 (15.2) | 29.7 (11.8) | 31.6 (14.5) | $F(2, 221)= 1.61$, $p=.202$ |

*non-significant trend at p<0.05 level

**significant at p<0.01 level

BES – Beliefs about Emotions Scale, CAPS – Child and Adolescent Perfectionism Scale, CFQ – Chalder Fatigue Questionnaire, FMPS - Frost Multidimensional Perfectionism Scale, SF36PFS – Short Form 36 Physical Functioning Subscale

Table 3. Between group comparison on baseline variables – parents

| | | Group | | | |
|---|---|---|---|---|---|
| | | **CFS** | **Asthma** | **Healthy controls** | **Group difference** |
| | | **Mean (SD)** | **Mean (SD)** | **Mean (SD)** | |
| **Perfectionism - Personal Standards (FMPS)** | Mother | 19.6 (5.4) | 20.8 (5.2) | 21.0 (5.3) | $F(2, 198)= 1.69$, $p =.187$ |
| | Father | 20.6 (5.6) | 21.7 (5.6) | 22.8 (5.2) | $F(2, 109)= 1.81$, $p =.168$ |
| **Perfectionism - Parental Representations (FMPS)** | Mother | 18.5 (7.2) | 17.2 (5.3) | 20.2 (8.3) | $F(2, 198)= 1.77$, $p =.173$ |
| | Father | 18.2 (6.5) | 22.3 (8.3) | 22.8 (7.4) | $F(2, 109)= 5.46$, $p =.005$** |
| **Perfectionism - Maladaptive Perfectionism (FMPS)** | Mother | 27.5 (9.7) | 25.8 (8.8) | 27.1 (9.4) | $F(2, 198)= 0.33$, $p =.723$ |
| | Father | 28.9 (8.4) | 32.4 (6.2) | 30.3 (9.3) | $F(2, 109)= 0.78$, $p =.461$ |
| **Perfectionism – Organisation (FMPS)** | Mother | 21.1 (4.4) | 21.0 (5.8) | 22.8 (4.8) | $F(2, 198)= 3.03$, $p =.051$ |
| | Father | 20.6 (4.6) | 20.6 (3.3) | 20.4 (4.8) | $F(2, 109)= 0.02$, $p =.978$ |
| **Beliefs about Emotions (BES)** | Mother | 28.3 (13.3) | 26.2 (7.4) | 28.3 (14.7) | $F(2, 203)= 0.26$, $p =.773$ |
| | Father | 35.6 (14.3) | 39.3 (13.6) | 34.4 (11.5) | $F(2, 109)= 0.36$, $p =.702$ |
| **Self-sacrificing (YSI)** | Mother | 69.7 (12.2) | 62.2 (11.0) | 65.7 (14.4) | $F(2, 202)= 4.46$, $p =.013$* |
| | Father | 62.6 (11.6) | 56.0 (11.1) | 60.9 (11.2) | $F(2, 107)= 1.17$, $p =.313$ |
| **Affect regulation – Concealing (ASQ)** | Mother | 24.5 (5.0) | 23.2 (5.1) | 24.7 (5.4) | $F(2, 201)= 0.84$, $p =.431$ |
| | Father | 25.1 (5.8) | 25.3 (6.5) | 25.4 (5.5) | $F(2, 106)= 0.04$, $p =.965$ |
| **Affect regulation – Adjusting (ASQ)** | Mother | 23.3 (4.5) | 23.4 (3.1) | 24.3 (4.5) | $F(2, 201)= 1.23$, $p =.295$ |
| | Father | 22.8 (5.5) | 21.4 (7.1) | 22.9 (4.7) | $F(2, 106)= 0.22$, $p =.803$ |
| **Affect regulation – Tolerating (ASQ)** | Father | 16.0 (3.8) | 17.4 (3.6) | 17.5 (3.4) | $F(2, 106)= 2.11$, $p=.127$ |

*non-significant trend at p<0.05 level

**significant at p<0.01 level

ASQ - Affective Styles Questionnaire, FMPS - Frost Multidimensional Perfectionism Scale, YSI - Young Schema Inventory

Note: Group comparisons were not conducted on the ASQ Tolerating subscale (mother) due to the low reliability of this subscale in the group with asthma.

Table 4. Pearson's correlations between adolescent and parent perfectionism FMPS Subscales

| | | Maladaptive Perfectionism | Personal Standards | Parental Representations | Organisation |
|---|---|---|---|---|---|
| | | | **Adolescent** | | |
| **Maladaptive Perfectionism** | Mother | .327** (.001) | | | |
| | Father | 0.150 (.214) | | | |
| **Personal Standards** | Mother | | .236* (.015) | | |
| | Father | | .220 (.067) | | |
| **Parental Representations** | Mother | | | .143 (.147) | |
| | Father | | | -.051 (.675) | |
| **Organisation** | Mother | | | | .100 (.312) |
| | Father | | | | .175 (.148) |

Data shown as *r* (*p*)
Two tailed tests
*non-significant trend at *p*<0.05 level
**significant at *p*<0.01 level

Table 5. Pearson's correlations between adolescent beliefs about emotions, adolescent perfectionism and parent affect regulation

| | | Beliefs about Emotions (BES) | Maladaptive Perfectionism (FMPS) | Personal Standards (FMPS) | Parental Representations (FMPS) | Organisation (FMPS) | Self-oriented perfectionism (CAPS) | Other-oriented perfectionism (CAPS) |
|---|---|---|---|---|---|---|---|---|
| | | | | **Adolescent** | | | | |
| **Affect regulation - Concealing (ASQ)** | Mother | -0.02 (.843) | -0.08 (.412) | -0.02 (.807) | -0.03 (.738) | -0.07 (.467) | 0.03 (.772) | <0.00 (.989) |
| | Father | 0.05 (.695) | -0.07 (.563) | 0.15 (.217) | 0.05 (.706) | 0.06 (.652) | <0.00 (.992) | <0.00 (.983) |
| **Affect regulation - Adjusting (ASQ)** | Mother | -0.12 (.231) | -0.19 (.053) | -0.24* (.015) | -0.05 (.609) | -0.06 (.569) | -0.10 (.297) | -0.07 (.498) |
| | Father | _0.09 (.496) | -0.26* (.033) | -0.06 (.602) | -0.29* (.018) | -0.02 (.899) | -0.10 (.430) | -0.24 (.051) |
| **Affect regulation – Tolerating (ASQ)** | Father | -0.06 (.604) | -0.22 (.072) | -0.12 (.336) | -0.19 (.119) | -0.08 (.504) | -0.09 (.458) | -0.22 (.078) |
| **Self-sacrificing (YSI)** | Mother | 0.18 (.063) | 0.11 (.282) | 0.12 (.241) | <0.00 (.993) | 0.11 (.281) | 0.17 (.073) | 0.19 (.057) |
| | Father | -0.10 (.433) | -0.07 (.558) | 0.24* (.048) | -0.20 (.098) | 0.14 (.240) | 0.08 (.528) | -0.10 (.413) |

ASQ - Affective Styles Questionnaire, BES – Beliefs about Emotions Scale, CAPS – Child and Adolescent Perfectionism Scale, FMPS - Frost Multidimensional Perfectionism Scale, YSI - Young Schema Inventory
Note: Group comparisons were not conducted on the ASQ Tolerating subscale (mother) due to the low reliability of this subscale in the group with asthma.
Data shown as *r* (*p*)
Two tailed tests
*non-significant trend at *p*<0.05 level
**significant at *p*< 0.01 level

Table 6. Hierarchical linear model of predictors of fatigue and physical functioning at time 2

| | ***Unstandardised B*** | **S.E. B** | **Standardised Beta** | **T** | ***P*** |
|---|---|---|---|---|---|
| | | | ***Outcome: Time 2 Fatigue*** | | |
| **Step 1** | | | | | |
| **Constant** | 6.88 | 2.45 | | 2.81 | .006 |
| **T1 fatigue** | 0.67 | 0.10 | 0.60 | 6.52 | <.001 |
| **$r^2$ = 0.356, p < .001** | | | | | |
| **Step 2** | | | | | |
| **Constant** | 8.08 | 3.49 | | 2.32 | .023 |
| **T1 fatigue** | 0.65 | 0.11 | 0.58 | 5.94 | <.001 |
| **T1 CAPS self-oriented perfectionism** | -0.01 | 0.10 | -0.01 | -0.09 | .930 |
| **T1 CAPS other-oriented perfectionism** | 0.05 | 0.11 | 0.07 | 0.48 | .636 |
| **T1 BES** | -0.01 | 0.07 | -0.02 | -0.16 | .874 |
| **T1 FMPS Personal Standards** | -0.10 | 0.14 | -0.10 | -0.69 | .496 |
| **T1 FMPS Organisation** | -0.11 | 0.12 | -0.10 | -0.89 | .378 |
| **T1 FMPS Parental Representations** | <0.01 | 0.15 | <0.01 | 0.01 | .992 |
| **T1 FMPS Maladaptive Perfectionism** | 0.08 | 0.10 | 0.15 | 0.86 | .391 |
| **$r^2$ = 0.381, $r^2$ change = 0.025, p = .893** | | | | | |
| | | | ***Outcome: Time 2 Physical Functioning (SF36PFS)*** | | |
| **Step 1** | | | | | |
| **Constant** | 14.03 | 4.83 | | 2.90 | .005 |
| **T1 physical functioning (SF36PFS)** | 0.81 | 0.08 | 0.75 | 9.62 | <.001 |
| **$r^2$ = 0.559, p < .001** | | | | | |
| **Step 2** | | | | | |
| **Constant** | 13.43 | 10.52 | | 1.28 | .206 |
| **T1 physical functioning (SF36PFS)** | 0.80 | 0.09 | 0.74 | 9.16 | <.001 |
| **T1 CAPS self-oriented perfectionism** | -0.14 | 0.32 | -0.06 | -0.45 | .653 |

| | | | | | |
|---|---|---|---|---|---|
| **T1 CAPS other-oriented perfectionism** | -0.33 | 0.38 | -0.10 | -0.87 | .390 |
| **T1 BES** | 0.23 | 0.22 | 0.12 | 1.06 | .294 |
| **T1 FMPS Personal Standards** | 0.79 | 0.47 | 0.21 | 1.66 | .101 |
| **T1 FMPS Organisation** | -0.59 | 0.41 | -0.14 | -1.43 | .157 |
| **T1 FMPS Parental Representations** | 0.22 | 0.51 | 0.05 | 0.44 | .665 |
| **T1 FMPS Maladaptive Perfectionism** | -0.10 | 0.32 | -0.05 | -0.31 | .757 |
| **$r^2$ = 0.606, $r^2$ change = 0.047, p = .355** | | | | | |

BES – Beliefs about Emotions Scale, CAPS – Child and Adolescent Perfectionism Scale, CFQ – Chalder Fatigue Questionnaire, FMPS - Frost Multidimensional Perfectionism Scale, SF36PFS – Short form 36 physical functioning subscale

**References**


Bould, H., Lewis, G., Emond, A., & Crawley, E. (2011). Depression and anxiety in children with CFS/ME: cause or effect? *Arch Dis Child, 96*(3), 211-214. doi:http://dx.doi.org/10.1136/adc.2009.173161

Brigden, A., Loades, M., Abbott, A., Bond-Kendall, J., & Crawley, E. (2017). Practical management of chronic fatigue syndrome or myalgic encephalomyelitis in childhood. *Arch Dis Child*, archdischild-2016-310622.

Brooks, S. K., Chalder, T., & Rimes, K. A. (2017). Chronic fatigue syndrome: cognitive, behavioural and emotional processing vulnerability factors. *Behav Cogn Psychother, 45*(2), 156-169.

Cella, M., & Chalder, T. (2010). Measuring fatigue in clinical and community settings. *J Psychosom Res, 69*(1), 17-22.

Chalder, T., Berelowitz, G., Pawlikowska, T., Watts, L., Wessely, S., Wright, D., & Wallace, E. (1993). Development of a fatigue scale. *J Psychosom Res, 37*(2), 147-153.

Clark, S., & Coker, S. (2009). Perfectionism, self-criticism and maternal criticism: A study of mothers and their children. *Personality and Individual Differences, 47*(4), 321-325. doi:10.1016/j.paid.2009.03.020

Collin, S. M., Bakken, I. J., Nazareth, I., Crawley, E., & White, P. D. (2017). Health care resource use by patients before and after a diagnosis of chronic fatigue syndrome (CFS/ME): a clinical practice research datalink study. *BMC Fam Pract, 18*(1), 60. doi:10.1186/s12875-017-0635-z

Crawley, E., Hunt, L., & Stallard, P. (2009). Anxiety in children with CFS/ME. *Eur Child Adolesc Psychiatry, 18*(11), 683-689. doi:10.1007/s00787-009-0029-4

Deary, V., & Chalder, T. (2010). Personality and perfectionism in chronic fatigue syndrome: a closer look. *Psychol Health, 25*(4), 465-475. doi:10.1080/08870440802403863

Essau, C. A., Leung, P. W., Conradt, J., Cheng, H., & Wong, T. (2008). Anxiety symptoms in Chinese and German adolescents: Their relationship with early learning experiences, perfectionism, and learning motivation. *Depress Anxiety, 25*(9), 801-810.

Field, A. (2013). *Discovering statistics using IBM SPSS statistics*: sage.

Flett, G. L., Coulter, L.-M., Hewitt, P. L., & Nepon, T. (2011). Perfectionism, rumination, worry, and depressive symptoms in early adolescents. *Canadian Journal of School Psychology, 26*(3), 159-176.

Flett, G. L., Hewitt, P. L., Besser, A., Su, C., Vaillancourt, T., Boucher, D., . . . Gale, O. (2016). The Child–Adolescent Perfectionism Scale: Development, psychometric properties, and associations with stress, distress, and psychiatric symptoms. *Journal of Psychoeducational Assessment, 34*(7), 634-652.

Flett, G. L., Hewitt, P. L., Oliver, J. M., & Macdonald, S. (2002). Perfectionism in children and their parents: A developmental analysis.

Flo, E., & Chalder, T. (2014). Prevalence and predictors of recovery from chronic fatigue syndrome in a routine clinical practice. *Behav Res Ther, 63*(0), 1-8. doi:http://dx.doi.org/10.1016/j.brat.2014.08.013

Frost, R. O., Marten, P., Lahart, C., & Rosenblate, R. (1990). The dimensions of perfectionism. *Cognitive Therapy and Research, 14*(5), 449-468.

Gee, L., Abbott, J., Conway, S., Etherington, C., & Webb, A. (2002). Validation of the SF-36 for the assessment of quality of life in adolescents and adults with cystic fibrosis. *Journal of Cystic Fibrosis, 1*(3), 137-145.

Hawkins, C. C., Watt, H. M., & Sinclair, K. E. (2006). Psychometric properties of the Frost Multidimensional Perfectionism Scale with Australian adolescent girls: Clarification of multidimensionality and perfectionist typology. *Educational and psychological measurement, 66*(6), 1001-1022.

Hewitt, P. L., Newton, J., Flett, G. L., & Callander, L. (1997). Perfectionism and suicide ideation in adolescent psychiatric patients. *J Abnorm Child Psychol, 25*(2), 95-101.

Hofmann, S. G., & Kashdan, T. B. (2010). The affective style questionnaire: development and psychometric properties. *Journal of Psychopathology and Behavioral Assessment, 32*(2), 255-263.

Jacobs, R., Silva, S. G., Reinecke, M. A., Curry, J. F., Ginsburg, G. S., Kratochvil, C. J., & March, J. S. (2009). Dysfunctional attitudes scale perfectionism: a predictor and partial mediator of acute treatment outcome among clinically depressed adolescents. *J Clin Child Adolesc Psychol, 38*(6), 803-813. doi:10.1080/15374410903259031

Kempke, S., Luyten, P., Van Houdenhove, B., Goossens, L., Bekaert, P., & Van Wambeke, P. (2011). Self-esteem mediates the relationship between maladaptive perfectionism and depression in chronic fatigue syndrome. *Clin Rheumatol, 30*(12), 1543-1548. doi:10.1007/s10067-011-1772-8

Lievesley, K., Rimes, K. A., & Chalder, T. (2014). A review of the predisposing, precipitating and perpetuating factors in Chronic Fatigue Syndrome in children and adolescents. *Clin Psychol Rev, 34*(3), 233-248. doi:10.1016/j.cpr.2014.02.002

Lloyd, S., Chalder, T., & Rimes, K. A. (2012). Family-focused cognitive behaviour therapy versus psycho-education for adolescents with chronic fatigue syndrome: long-term follow-up of an RCT. *Behav Res Ther, 50*(11), 719-725. doi:10.1016/j.brat.2012.08.005

Lloyd, S., Chalder, T., Sallis, H. M., & Rimes, K. A. (2012). Telephone-based guided self-help for adolescents with chronic fatigue syndrome: A non-randomised cohort study. *Behav Res Ther, 50*(5), 304-312. doi:10.1016/j.brat.2012.02.014

Loades, M. E., Rimes, K. A., Ali, S., Lievesley, K., & Chalder, T. (2017). The presence of co-morbid mental health problems in a cohort of adolescents with chronic fatigue syndrome. *Clin Child Psychol Psychiatry*, 1359104517736357.

Loades, M. E., Rimes, K. A., Lievesley, K., Ali, S., & Chalder, T. (2018). Illness beliefs of adolescents with CFS and their parents: the perceived causes of illness and beliefs about recovery. *International Journal of Adolescent Medicine and Health*.

Morris, L., & Lomax, C. (2014). Review: Assessment, development, and treatment of childhood perfectionism: a systematic review. *Child Adolesc Ment Health, 19*(4), 225-234. doi:10.1111/camh.12067

Moss-Morris, R., Spence, M., & Hou, R. (2011). The pathway from glandular fever to chronic fatigue syndrome: can the cognitive behavioural model provide the map? *Psychol Med, 41*(5), 1099-1107.

NICE. (2007). *Chronic fatigue syndrome/myalgic encephalomyelitis (or encephalopathy): Diagnosis and management of CFS/ME in adults and children*.

Nijhof, S. L., Bleijenberg, G., Uiterwaal, C. S., Kimpen, J. L., & van de Putte, E. M. (2012). Effectiveness of internet-based cognitive behavioural treatment for adolescents with chronic fatigue syndrome (FITNET): a randomised controlled trial. *The Lancet, 379*(9824), 1412-1418.

Oei, T. P. S., & Baranoff, J. (2007). Young Schema Questionnaire: Review of psychometric and measurement issues*. *Australian Journal of Psychology, 59*(2), 78-86. doi:doi:10.1080/00049530601148397

Parker, W. D., & Adkins, K. K. (1995). A psychometric examination of the Multidimensional Perfectionism Scale. *Journal of Psychopathology and Behavioral Assessment, 17*(4), 323-334.

Rangel, L., Garralda, M. E., Hall, A., & Woodham, S. (2003). Psychiatric adjustment in chronic fatigue syndrome of childhood and in juvenile idiopathic arthritis. *Psychol Med, 33*(2), 289-297.

Richards, J., Turk, J., & White, S. (2005). Children and adolescents with Chronic Fatigue Syndrome in non-specialist settings: beliefs, functional impairment and psychiatric disturbance. *Eur Child Adolesc Psychiatry, 14*(6), 310-318. doi:10.1007/s00787-005-0477-4

Rimes, K., Ashcroft, J., Bryan, L., & Chalder, T. (2016). Emotional Suppression in Chronic Fatigue Syndrome: Experimental Study. *Health Psychology*. doi:10.1037/hea0000341

Rimes, K., & Chalder, T. (2010). The Beliefs about Emotions Scale: validity, reliability and sensitivity to change. *J Psychosom Res, 68*(3), 285-292. doi:10.1016/j.jpsychores.2009.09.014

Roxborough, H. M., Hewitt, P. L., Kaldas, J., Flett, G. L., Caelian, C. M., Sherry, S., & Sherry, D. L. (2012). Perfectionistic self-presentation, socially prescribed perfectionism, and Suicide in Youth: A Test of the Perfectionism Social Disconnection Model. *Suicide and Life-Threatening Behavior, 42*(2), 217-233.

Soenens, B., Elliot, A. J., Goossens, L., Vansteenkiste, M., Luyten, P., & Duriez, B. (2005). The intergenerational transmission of perfectionism: parents' psychological control as an intervening variable. *J Fam Psychol, 19*(3), 358-366. doi:10.1037/0893-3200.19.3.358

Stöber, J. (1998). The Frost Multidimensional Perfectionism Scale revisited: More perfect with four (instead of six) dimensions. *Personality and Individual Differences, 24*(4), 481-491.

Stornelli, D., Flett, G. L., & Hewitt, P. L. (2009). Perfectionism, achievement, and affect in children: A comparison of students from gifted, arts, and regular programs. *Canadian Journal of School Psychology, 24*(4), 267-283.

Surawy, C., Hackmann, A., Hawton, K., & Sharpe, M. (1995). Chronic Fatigue Syndrome: A cognitive approach. *Behav Res Ther, 33*(5), 535-544. doi:http://dx.doi.org/10.1016/0005-7967(94)00077-W

Ware Jr, J. E., Kosinski, M., & Keller, S. D. (1996). A 12-Item Short-Form Health Survey: construction of scales and preliminary tests of reliability and validity. *Medical care, 34*(3), 220-233.

Young, J. E., & Brown, G. (1994). Young schema questionnaire. *Cognitive therapy for personality disorders: A schema-focused approach*, 63-76.